RESEARCH BULLETIN 1001 JULY 1967

Costs of Producing Hogs in Ohio

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AGDEX 420/821

7-67-5M

Costs of Producing Hogs in Ohio[1]

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SUMMARY

A study of 148 hog records for 1962 and 1963 brought out two important facts. The first was that hog costs vary considerably, even on the same farm. The second was that many items must be watched closely if low hog costs are to be obtained.

The average cost of producing a 38-lb. pig to weaning was $9.67 for all farms in the study. The low cost third of these farmers had an average cost of only $7.15 per head. The high cost third spent $12.49 to raise a pig to weaning.

The average farmer spent $12.75 to produce 100 lb. of gain on a 38-lb. pig fed to 212 lb. The low cost third of the farmers produced 100 lb. of gain at an average cost of $10.75. The high cost third spent $15.05 per 100 lb. of gain.

The average cost of producing 100 lb. of live hogs for the entire hog enterprise was $15.18. This includes both the cost of producing the pig to weaning and the cost of raising the weaned pig to 212 lb. The low cost third of these farmers produced 100 lb. of hogs for $13.20 compared with $17.45 for the high cost third.

Feed accounted for 54 percent of the cost of raising a pig to weaning, 77 percent of the cost of feeding a 38-lb. pig to 212 lb., and 69 percent of the cost of producing 100 lb. of hogs for the entire hog enterprise.

This study showed that many farmers could reduce the cost of producing a pig to weaning by about $1 a head by raising one more pig per litter. Cost per pig was $11.55 when 5.3 pigs were raised per litter, compared with $8.82 a head when 8.6 pigs were raised per litter.

Cost of producing 100 lb. of live hogs did not decline significantly after size of herd reached 34 sows. However, many farmers kept more than 34 sows to obtain the benefits of a larger volume of business. Large herds reduced the cost of feeding the pigs to slaughter weights more than they reduced the cost of producing feeder pigs. This was mainly due to the fact that the herd fed for slaughter purposes was better able to use automatic equipment.

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[1]Special thanks are given to Dr. C. R. Weaver and Dr. F. E. Walker of the Ohio Agricultural Research and Development Center for assistance in summarizing data collected in this study.

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Pigs farrowed in central houses cost practically the same at weaning as pigs farrowed in individual houses. Therefore, other factors besides cost per pig must be considered in selecting buildings and equipment for the breeding herd.

The average farmer used 396 lb. of feed to produce 100 lb. of gain on a 38-lb. pig fed to 212 lb. The low cost third of these farmers used only 346 lb. but the high cost third used 454 lb. For the entire hog enterprise, the average farmer used 412 lb. of feed to produce 100 lb. of live weight. The low cost third of the farmers used only 374 lb. compared with 451 lb. for the high cost third.

OBJECTIVES

The main objectives of this study were:

- To determine the physical inputs used to produce feeder pigs and slaughter hogs under varying conditions.
- To determine the costs of producing feeder pigs and slaughter hogs for different farm situations.
- To determine how various factors affect the cost of producing feeder pigs and slaughter hogs.

OBTAINING DATA

Detailed information on the hog enterprise was obtained from 148 records kept by commercial hog farmers. Sixty-seven records were kept in 1962 and 81 were kept in 1963. Forty-eight farmers kept continuous records for the 2-year period. Nineteen farmers kept records only for 1962 and 33 farmers kept records only for 1963.

The farmers were located in Madison, Greene, Clinton, Fayette, and Pickaway counties. Data were obtained on all items connected with the production of feeder pigs and the feeding of pigs from weaning to slaughter weights.

In selecting farms to be studied, the first step was to compile a list of farmers who might keep the necessary records. This list was obtained mainly from county extension agents and vocational agriculture teachers. The second step was to contact each farmer individually to determine whether or not he would participate in the study. At this time, each farmer who agreed to cooperate in the project was given detailed instructions in regard to keeping records on his hog enterprise.

The third step was to visit each cooperator three to four times during the year and assist him in keeping his records up to date. During each of these visits, the fieldman collected additional data which were not recorded by the farmer in his special record books. The fourth step was to collect the record books at the end of the year and lend

some assistance in completing the final inventories if the farmer had not already made the necessary recordings.

Although this sampling procedure permitted possible bias in favor of record keepers, this possible bias was accepted because of the need for accurate and complete records of the amount of labor and feed used.

Size of herd ranged from 14 to 145 sows. Seventeen percent of the records were for herds below 30 sows; 25 percent were for herds of 30 to 39 sows; 28 percent were for herds of 40 to 59 sows; and 30 percent were for herds of 60 or more sows.

ANALYSIS OF DATA

Although 48 farmers kept continuous records for the 2-year period, records for both years were treated as 148 different observations concerning the way hogs were raised.

This study showed that hog costs varied considerably, even on the same farm. For example, 25 of the farmers who kept records for both years had hog costs which varied up to $2 per hundredweight from 1962 to 1963; 13 farmers had costs which varied from $2 to $4 for the 2-year period; and 10 farmers had costs which varied more than $4 per hundredweight from 1962 to 1963.

The following conditions contributed to these variations in costs on the same farm. The inherent capacity of different herds of slaughter hogs varied from year to year because of different sows and boars in the breeding herd. Yearly variations in costs also occurred because of differences in death losses, size of litter, and effectiveness of controlling hog diseases.

Cost of producing 100 lb. of live hogs was $1.60 lower in 1963 than in 1962 for the 48 farmers who kept continuous records for both years. Cost of producing 100 lb. of live hogs was $1.72 lower for the 33 new farmers who were added to the list of cooperators for 1963 than the 19 farmers who quit keeping records at the end of 1962. These figures indicate that the farmers who dropped out of the project at the end of 1962 were replaced with about the same kind of farmers from the standpoint of total costs.

Statistical tests showed that the cost differences for the 2 years were great enough that the two samples (1962 and 1963) could have been drawn from different populations of hog producers.

PRICES USED

Prices used in calculating costs were as follows: labor, $1.50 per hour; tractor power, $1.25 per hour; corn, $1.10 per bushel; and oats, $.65 per bushel. Actual prices paid by the farmers were used to determine the cost of protein supplement, which includes minerals, salt, and antibiotics. This charge averaged about $6.25 per 100 lb. for all farms in the study.

An interest charge of 5 percent was figured on all capital invested in the hog enterprise. No charge was made for bedding since the cost of this item was assumed to equal the value of the manure produced.

Other costs such as feed grinding, veterinary, electricity, and heating oil were charged at the actual prices paid by the farmers. When feed was ground on the farm, the cost of this item was included in the labor and equipment charges.

COSTS OF PRODUCING FEEDER PIGS

Low vs. High Costs

Costs of producing a pig to weaning are shown in Table 1 for three levels of management. These figures were obtained as follows. The first step was to calculate on an annual basis for the entire farm the various costs of maintaining the breeding herd and caring for the pigs until they were weaned. The second step was to total these various costs and subtract from this figure the market value of the net increase in the weight of the sows and gilts during the current year. The third step was to divide each cost item by the number of pigs weaned.

The average cost of producing a 38 lb. pig to weaning was $9.67 for all farms in the study. This was based on raising 12.2 pigs from each sow kept in the herd an average of 12 months. Size of litter averaged 7.2 pigs raised to weaning.

The number of litters farrowed per sow was 1.7 for the year. Several reasons may be given why this figure is below two litters. Gilts were considered to be in the breeding herd after the group of hogs from which they were selected was sold for slaughter. A number of sows and gilts did not conceive the first time. Many sows were not sold for at least a month after their last litter of pigs was weaned. Therefore, a 100-sow herd produced only 170 litters of pigs a year.

Size of herd, which averaged 53 sows for all farms in the study, was determined by calculating the total number of months all sows and gilts were in the herd during the current year and dividing by 12. For example, if a farmer had 25 sows for 12 months, 20 sows for 7 months, and 20 gilts for 5 months, he would have 540 sow-months or an average of 45 sows for a 12-month period.

Charges for the various items and their importance in the total cost of producing a pig to weaning, including the gain in weight of the sows and gilts, were as follows: feed, including the grinding hired, $5.72 or 54 percent; labor, $1.65 or 16 percent; tractor, building, and equipment charges, $1.53 or 14 percent; veterinary and medicine, $.84 or 8 percent; and miscellaneous, $.80 or 8 percent. Feed and labor accounted for 70 percent of the total cost of producing a pig to weaning.

Figures in Table 1 show that one-third of the farmers in the study produced a pig to weaning at an average cost of only $7.15 a head. In contrast, another one-third of the farmers had feeder pig costs which averaged $12.49 a head at about the same weaning weight. In other

TABLE 1.—Costs of Producing a Pig to Weaning, West Central Ohio, 1962 and 1963.

	Low Cost Group 49 Records	High Cost Group 49 Records	Entire Study 148 Records
Labor	$1.28	$ 2.17	$ 1.65**
Tractor Power	.19	.31	.25*
Corn	2.40	3.99	3.14**
Oats	.26	.37	.30
Protein Supplement	1.37	2.54	2.05**
Pasture	.12	.15	.14
Feed Grinding Hired	.06	.12	.09
Veterinary and Medicine	.65	1.06	.84**
Electricity and Heating Oil	.20	.25	.21
Truck, Automobile, Telephone	.11	.16	.13
Depreciation of Breeding Stock	.09	.20	.13**
Buildings and Equipment	.96	1.69	1.28**
Taxes and Interest on Investment in Hogs	.30	.38	.33
Total Cost, Including Gain in Weight of Sows and Gilts	7.99	13.39	10.54**
Less Market Value of Gain in Weight of Sows and Gilts	.84	.90	.87
Net Cost per Pig	$7.15	$12.49	$ 9.67**
Number of Sows in Herd	51	48	53
Pigs Raised to Weaning per Litter	7.7	6.7	7.2**
Weight of Pigs at Weaning, Lb.	38	39	38
Investment in Buildings and Equipment per Sow, Dollars	63	81	71
Litters Farrowed per Sow per Year	1.7	1.6	1.7
Groups of Pigs Farrowed per Year	5.8	5.6	5.7
Death Loss of Sows, Percent	2.0	4.0	2.8**
Gain in Weight per Sow, Lb.	121	104	114

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

words, the low cost group of farmers produced a pig to weaning for $5.34 less than the high cost group. These lower costs per pig were due principally to using only 60 percent as much feed and labor per sow and raising to weaning 2.4 more pigs per sow each year than the high cost producers. The low cost producers raised 13.1 pigs per sow annually compared with 10.7 pigs per sow for the high cost producers.

Differences in costs per pig between the low and high cost farms, including the gain in weight of the sows and gilts, were as follows: feed, including hired grinding, $2.96; labor, $.89; tractor, buildings, and equipment, $.85; veterinary and medicine, $.41; and miscellaneous, $.29.

Although pigs are the principal product of a breeding herd, some pork also is produced. This study showed a net increase in the weight of the breeding herd averaging 114 lb. for each sow kept 12 months. This sizeable amount of gain in live weight was the result of replacing about half of the breeding herd with gilts each year. Some credit was given to this gain in weight in calculating the actual cost of producing a pig to weaning. The value of this increase in weight was based on appraising the gilts at their market value when they entered the herd and valuing the sows at the market price for slaughter purposes when they left the herd.

The average amounts of labor, tractor power, and feed used to produce a feeder pig, including the gain in weight of the sows and gilts, are given in Table 2. Labor inputs include the direct labor used in caring for the sows and pigs to weaning and such other jobs as hauling manure, maintaining hog fences, repairing hog buildings and equipment, marketing sows and gilts, and purchasing breeding stock.

The low cost producers raised a feeder pig on 157 lb. of feed compared with 260 lb. for the high cost producers. Labor inputs were .85 of an hour for the low cost group compared with 1.45 hours for the high cost group.

TABLE 2.—Labor, Tractor Power, and Feed Used to Produce a Pig to Weaning, West Central Ohio, 1962 and 1963.

	Low Cost Group 49 Records	High Cost Group 49 Records	Entire Study 148 Records
Labor, Hours	.85	1.45	1.10
Tractor Power, Hours	.15	.25	.20
Corn, Lb.	122	203	160
Oats, Lb.	13	18	15
Protein Supplement, Lb.	22	39	32
Total Feed, Lb.	157	260	207

Costs for Different Size Litters

Figures in Table 3 show that many farmers could reduce the cost of producing a pig to weaning by about $1 a head by raising one more pig per litter. When the number of pigs raised to weaning averaged only 5.3 pigs per litter, cost per pig was $11.55. When 8.6 pigs were raised per litter, however, cost per pig declined to $8.82. This lower cost was mainly due to spending less per pig for feed, buildings, equipment, taxes, and interest.

TABLE 3.—Costs of Raising a Pig to Weaning for Different Size Litters, West Central Ohio, 1962 and 1963.

	Pigs Raised to Weaning per Litter			
	Below 6.0; Average 5.3 Pigs	6.0-6.9; Average 6.5 Pigs	7.0-7.9; Average 7.5 Pigs	8.0 and Above; Average 8.6 Pigs
Labor	$ 1.82	$ 1.64	$ 1.59	$ 1.53
Tractor Power	.29	.23	.28	.24
Corn	4.09	3.44	2.91	2.67**
Oats	.30	.35	.37	.24
Protein Supplement	2.20	1.96	2.04	2.00
Pasture	.14	.15	.14	.11
Feed Grinding Hired	.15	.09	.09	.07
Veterinary and Medicine	.82	.82	.77	.91
Electricity and Heating Oil	.25	.22	.20	.21
Truck, Automobile, Telephone	.15	.17	.12	.11*
Depreciation of Breeding Stock	.19	.18	.10	.11
Buildings and Equipment	1.64	1.31	1.22	1.14*
Taxes and Interest on Investment in Hogs	.42	.37	.31	.28**
Total Cost, Including Gain in Weight of Sows and Gilts	12.46	10.93	10.14	9.62**
Less Market Value of Gain in Weight of Sows and Gilts	.91	.97	.88	.80
Net Cost per Pig	$11.55	$ 9.96	$ 9.26	$ 8.82**
Number of Records	22	38	46	42
Number of Sows in Herd	53	52	59	50
Weight of Pigs at Weaning, Lb.	37	40	38	38
Investment in Buildings and Equipment per Sow, Dollars	70	68	68	77
Litters Farrowed per Sow per Year	1.8	1.7	1.6	1.7
Groups of Pigs Farrowed per Year	6.0	5.6	6.8	4.8**
Death Loss of Sows, Percent	2.4	2.7	2.5	3.3
Gain in Weight per Sow, Lb.	91	116	115	127

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

TABLE 4.—Labor, Tractor Power, and Feed Used to Produce a Pig to Weaning, West Central Ohio, 1962 and 1963.

	Pigs Raised to Weaning per Litter			
	Below 6.0; Average 5.3 Pigs	6.0-6.9; Average 6.5 Pigs	7.0-7.9; Average 7.5 Pigs	8.0 and Above; Average 8.6 Pigs
Labor, Hours	1.21	1.09	1.06	1.02
Tractor Power, Hours	.23	.18	.22	.19
Corn, Lb.	208	175	148	136
Oats, Lb.	15	17	18	12
Protein Supplement, Lb.	33	30	32	32
Total Feed, Lb.	256	222	198	180

TABLE 5.—Costs of Raising a Pig to Weaning for Different Types of Housing, West Central Ohio, 1962 and 1963.

	Type of Housing	
	Central	Individual
Labor	$1.43	$1.62
Tractor Power	.25	.31
Feed	5.56	5.77
Veterinary and Medicine	.83	.91
Electricity and Heating Oil	.26	.15*
Truck, Automobile, Telephone	.13	.14
Depreciation of Breeding Stock	.16	.13
Buildings and Equipment	1.40	1.00**
Taxes and Interest on Investment in Hogs	.33	.33
Total Cost, Including Gain in Weight of Sows and Gilts	10.35	10.36
Less Market Value of Gain in Weight of Sows and Gilts	.77	.85
Net Cost per Pig	$9.58	$9.51
Number of Records	43	43
Number of Sows in Herd	56	48
Pigs Raised to Weaning per Litter	7.2	7.5
Weight of Pigs at Weaning, Lb.	37	42**
Investment in Buildings and Equipment per Sow, Dollars	91	50**
Litters Farrowed per Sow per Year	1.7	1.7
Groups of Pigs Farrowed per Year	6.2	4.5**
Death Loss of Sows, Percent	3.9	1.6**
Gain in Weight per Sow, Lb.	102	112

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

Feed consumption per sow and pigs to weaning increased as more pigs were raised per litter. But feed consumption per pig, including a share of the sow's feed, went down as size of litter increased. For example, $64 worth of feed was consumed annually by a sow and pigs when 5.3 pigs were weaned per litter compared with $76 worth of feed when 8.6 pigs were raised. Cost of feed per pig, including a share of the sow's feed, averaged $6.88 when 5.3 pigs were weaned per litter compared with $5.09 when 8.6 pigs were raised.

The fixed charges of producing a pig to weaning remain about the same for a particular size herd, regardless of the size of litter produced. On a pig basis, however, these charges go down as size of litter increases. Specific items in this cost category are interest, taxes, insurance, depreciation, and repair of buildings and equipment.

The average amounts of labor, tractor power and feed used to produce a pig to weaning are given in Table 4 for different size litters. The amounts of feed used to produce a pig for different size litters were: 256 lb. for litters of 5.3 pigs, 222 lb. for litters of 6.5 pigs, 198 lb. for litters of 7.5 pigs, and 180 lb. for litters of 8.6 pigs.

Central vs. Individual Housing

Figures in Table 5 show that pigs farrowed in central houses cost practically the same at weaning as pigs farrowed in individual houses. However, costs of the various items were not the same. For example, buildings and equipment were substituted for labor to some extent. These figures indicate that farmers will have to use other criteria besides cost per pig to determine how sows and gilts will be housed.

These figures are based on a study of 86 hog records. Half of these records came from farms on which central housing was used at time of farrowing. The other half came from farms on which individual houses were used.

Central housing includes only buildings originally constructed for farrowing pigs. It does not include remodeled barns or other building converted to farrowing houses.

Building charges, which include depreciation, repairs, interest, taxes, and insurance, averaged $1.40 per pig for central housing compared with $1 per pig when sows farrowed in individual houses.

The present value of buildings and equipment used to produce a pig to weaning was $91 per sow for central housing but only $50 per sow for individual housing. Investments in buildings and equipment were estimated replacement costs minus depreciation.

This study showed that many commercial hog farmers had more than two groups of sows farrow during the year. The number of groups of sows farrowing each year was related to the kind of housing avail-

able. For example, an average of 6.2 farrowings was made per year on farms where central housing was used compared with 4.5 farrowings when individual houses were used. The study showed no reduction in the cost of producing a pig to weaning when more than four groups of sows were farrowed per year.

Electricity and heating oil cost 11 cents more per pig when central housing was used. This higher cost was probably due to farrowing a greater percentage of pigs during the winter months.

Pigs farrowed in central houses averaged 5 lb. less in weight at weaning than pigs farrowed in individual houses. This lighter weight may explain why feed costs were slightly lower for central housing.

The exact age at which the various litters of pigs were weaned was not obtained in this study. However, observations indicated that pigs farrowed in central houses were weaned earlier than pigs farrowed in individual houses.

This study shows that other factors besides cost per pig must be considered in selecting buildings and equipment for the breeding herd.

TABLE 6.—How Size of Herd Affects Pig Costs, West Central Ohio, 1962 and 1963.

	Number of Sows in Herd			
	14-29 Sows; Average 24	30-39 Sows; Average 34	40-59 Sows; Average 50	60-145 Sows; Average 89
Labor	$ 1.88	$1.51	$1.53	$1.64
Buildings and Equipment	2.10	1.58	1.60	1.52**
Feed	5.61	5.56	5.42	6.20
Miscellaneous	1.74	1.40	1.62	1.39
Total Cost, Including Gain in Weight of Sows and Gilts	11.33	10.05	10.17	10.75
Less Market Value of Gain in Weight of Sows and Gilts	.95	.85	.81	.91
Net Cost per Pig	$10.38	$9.20	$9.36	$9.84
Number of Records	25	37	41	45
Pigs Raised to Weaning per Litter	7.2	7.5	7.2	7.2
Weight of Pigs at Weaning, Lb.	38	41	37	38
Investment in Buildings and Equipment per Sow, Dollars	107	64	70	57**
Litters Farrowed per Sow per Year	1.7	1.7	1.8	1.6**
Groups of Pigs Farrowed per Year	3.6	4.8	6.1	7.5**
Death Loss of Sows, Percent	3.0	1.6	2.7	3.1**
Gain in Weight per Sow, Lb.	121	116	111	114

**Differences in related means significant at the .01 level.

Central housing enables many farmers to produce more pigs and increase hog sales with a given amount of labor than is possible with individual houses. This is mainly because normal size litters can be raised in central houses during the winter months.

Central housing lends itself better to mechanization than individual housing. Some of the new central houses may require less labor than the conventional ones found in this study.

Individual farrowing houses are used on many farms where capital is scarce. For example, individual houses and all necessary equipment can be purchased new for about $200 per house compared with $525 per pen for central housing. On this basis, individual housing would cost about $100 per sow in the herd when each house is used by two sows twice a year. However, central housing would cost about $175 per sow when each pen is used by three sows twice a year.

Individual housing appeals to farmers who want to be in a position to change to other types of farming at any time and still take only a minimum loss in building investment. Portable farrowing houses and equipment are easier to liquidate at current values than stationary buildings.

Pig Costs for Different Size Herds

Large breeding herds should produce cheaper pigs than small herds because of a more efficient use of labor, buildings, and equipment. Figures in Table 6 show that more sows did not reduce pig costs after size of herd reached about 34 sows. However, statistical tests showed that differences in total cost per pig and amount of labor used could have been due to sampling the entire population of commercial hog producers. On the other hand, field observations indicate that economies of scale extend to herds larger than 24 sows.

Investment in buildings and equipment per sow declined from $107 for a 24-sow herd to $64 for a 34-sow herd and then remained about the same for herds up to 89 sows. Building and equipment costs per pig declined from $2.10 for a 24-sow herd to $1.58 for a 34-sow herd and then remained about the same as size of herd increased. Part of the decline in building and equipment costs was probably due to a more intensive use in the larger herds. For example, 3.6 groups of sows were farrowed per year for the 24-sow herds compared with 7.5 groups for the 89-sow herds.

Pig Costs for Multiple Farrowings

Pig costs should be reduced slightly when more than two groups of sows are farrowed a year because of a more intensive use of farrowing buildings and equipment. Figures in Table 7 show that pig costs were

not reduced much when more than four groups of sows were farrowed per year. Multiple farrowings showed some reductions in the cost of labor, buildings and equipment, and miscellaneous items. However, these differences were not great enough to be statistically significant and could have been due to sampling.

Many farmers use multiple farrowings to level out the demands for labor during the year. This enables them to farrow more sows with a given amount of labor than is possible when only two groups of sows are farrowed a year. To farrow the maximum number of groups of sows a year, the tendency was to wean pigs at lighter weights as more groups were farrowed.

HOG COSTS FROM WEANING TO SLAUGHTER

Low vs. High Costs

Costs of producing 100 lb. of gain on hogs fed from 38 to 212 lb. are shown in Table 8. These figures show that many farmers can raise a pig from weaning to slaughter weights for less than three-fourths of the amount spent by other farmers.

Twenty-two percent of the records for feeding slaughter hogs were for herds of less than 300 hogs; 40 percent were for herds ranging from

TABLE 7.—How Number of Groups of Pigs Farrowed per Year Affects Pig Costs, West Central Ohio, 1962 and 1963.

	Number of Groups of Pigs Farrowed per Year			
	2	4	6	9
Labor	$ 1.88	$1.58	$1.58	$1.53
Buildings and Equipment	1.93	1.65	1.58	1.57
Feed	5.91	5.70	6.06	5.50
Miscellaneous	1.71	1.41	1.52	1.49
Total Cost, Including Gain in Weight of Sows and Gilts	11.43	10.34	10.74	10.09
Less Market Value of Gain in Weight of Sows and Gilts	.98	.93	.77	.82
Net Cost per Pig	$10.45	$9.41	$9.97	$9.27
Number of Records	27	46	30	45
Pigs Raised to Weaning per Litter	7.5	7.3	7.2	7.1
Weight of Pigs at Weaning, Lb.	43	39	39	35**
Investment in Buildings and Equipment per Sow, Dollars	75	75	73	62
Litters Farrowed per Sow per Year	1.6	1.7	1.7	1.7
Number of Sows in Herd	31	49	53	72**
Death Loss of Sows, Percent	2.6	2.8	4.0	2.2
Gain in Weight per Sow, Lb.	128	122	104	106

**Differences in related means significant at the .01 level.

300 to 599 hogs; 23 percent were for herds of 600 to 899 hogs; and 15 percent were for herds of 900 or more hogs. The number of hogs fed from 38 to 212 lb. averaged 585 per record for the entire study.

Cost of raising a 38-lb. pig to 212 lb. averaged $12.75 per 100 lb. of gain for all farms in the study. Costs of the various items were as follows: feed, including hired grinding and processing, $9.90 or 77 percent; buildings and equipment, $1.01 or 8 percent; labor, $.97 or 8 percent; and miscellaneous, $.87 or 7 percent.

The cost of producing a pound of gain for a hog fed from 38 to 212 lb. is considerably less than the cost per pound at weaning. For example, the average cost of producing a 38-lb. pig to weaning, including the prorated cost of keeping the breeding herd, was 25 cents a pound for all farms in the study.

The low cost third of the records showed that 100 lb. of gain were produced at an average cost of $10.75. But the high cost third showed a cost of $15.05 or $4.30 more per hundredweight of gain.

In hog production, the low cost group of farmers differed from the high cost group in the following ways: (1) they produced 100 lb. of

TABLE 8.—Costs of Producing 100 Lb. of Gain on Hogs Fed from 38 to 212 Lb., West Central Ohio, 1962 and 1963.

	Low Cost Group 50 Records	High Cost Group 50 Records	Entire Study 148 Records
Labor	$ .75	$ 1.27	$ .97**
Tractor Power	.19	.32	.25**
Corn	6.01	7.89	6.88**
Oats	.10	.08	.10
Protein Supplement	2.19	2.96	2.58**
Pasture	.11	.11	.10
Feed Grinding Hired	.18	.28	.25*
Veterinary and Medicine	.10	.13	.10
Electricity	.04	.06	.05
Truck, Automobile, Telephone	.10	.17	.13*
Buildings and Equipment	.70	1.40	1.01**
Taxes and Interest on Investment in Hogs	.28	.38	.33
Total	$10.75	$15.05	$12.75**
Number of Hogs Fed	660	460	585**
Death Loss, Percent	3.5	8.1	5.6
Weight of Slaughter Hogs, Lb.	214	206	212
Investment in Buildings and Equipment per Hog, Dollars	5.75	12.30	8.67**

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

TABLE 9.—Labor, Tractor Power and Feed Used to Produce 100 Lb. of Gain on Hogs Fed from 38 to 212 Lb., West Central Ohio, 1962 and 1963.

	Low Cost Group 50 Records	High Cost Group 50 Records	Entire Study 148 Records
Labor, Hours	.50	.85	.65
Tractor Power, Hours	.15	.26	.20
Corn, Lb.	306	402	350
Oats, Lb.	5	4	5
Protein Supplement, Lb.	35	48	41
Total Feed, Lb.	346	454	396

TABLE 10.—How Size of Herd Affects Costs of Producing 100 Lb. of Gain on Hogs Fed from 38 to 212 Lb., West Central Ohio, 1962 and 1963.

	Number of Hogs Fed per Year			
	55-285 Hogs Average 220	286-570 Hogs Average 425	571-855 Hogs Average 660	856-1880 Hogs Average 1140
Labor	1.31	1.02	.77	.78**
Tractor Power	.26	.26	.24	.23
Corn	7.03	7.05	6.64	6.60
Oats	.08	.16	.08	.04
Protein Supplement	2.43	2.54	2.54	2.78
Pasture	.11	.12	.10	.09
Feed Grinding Hired	.22	.24	.22	.31
Veterinary and Medicine	.13	.12	.10	.07
Electricity	.07	.05	.04	.04**
Truck, Automobile, Telephone	.21	.13	.11	.09**
Buildings and Equipment	1.56	.93	.86	.74**
Taxes and Interest on Investment in Hogs	.39	.37	.32	.30
Total	$13.80	$12.99	$12.02	$12.07**
Number of Records	30	53	35	30
Death Loss, Percent	8.9	5.7	5.3	5.1*
Weight of Slaughter Hogs, Lb.	205	212	214	215
Investment in Buildings and Equipment per Hog, Dollars	14.40	7.85	7.45	5.20**

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

gain with 24 percent less feed and 41 percent less labor; (2) they lost fewer hogs by death; and (3) they had only half as much invested per hog in buildings and equipment.

Differences in costs of producing 100 lb. of gain on the low and high cost groups of farms were as follows: feed, $2.73; use of buildings and equipment, $.70; and labor, $.52.

The average amounts of labor, tractor power, and feed used to produce 100 lb. of gain on a pig fed from weaning to slaughter weight are shown in Table 9. Labor inputs include all direct and indirect labor used in the feeding out process.

The amount of labor used to produce 100 lb. of gain averaged .50 of an hour for the low cost group compared with .85 of an hour for the high cost group.

The amount of feed required to produce 100 lb. of gain averaged 346 lb. for the low cost group of farmers compared with 454 lb. for the high cost group.

Costs for Different Size Herds

Figures in Table 10 show that most of the economies of scale were obtained when number of hogs fed per year reached about 660. When size of herd averaged 220 hogs, cost per hundredweight of gain was $13.80 compared with $12.02 when 660 hogs were fed out each year. Large herds produced significant reductions in the cost of labor, buildings, and equipment.

Cost of labor averaged $1.31 per hundredweight of gain when 220 hogs were fed out each year. However, when size of herd was 660 hogs fed to slaughter weights, labor cost was only $.77 per hundredweight of gain.

Cost of buildings and equipment was reduced from $1.56 per hundredweight of gain to $.74 by increasing the number of hogs raised from 220 per year to 1140. Investment in buildings and equipment per hog averaged $14.40 when size of herd averaged 220 hogs compared with $5.20 when 1140 hogs were raised.

COSTS FOR ENTIRE HOG ENTERPRISE

Low vs. High Costs

In this section, the cost of raising a pig to weaning is combined with the cost of feeding the pig to slaughter weight to give a total cost of producing 100 lb. of hogs. Costs of the various items are shown in Table 11 for the entire hog enterprise.

The following procedure was used to determine these costs. The first step was to calculate the various costs on an annual basis for the entire hog enterprise. The second step was to subtract from each of these items the respective costs of producing any pigs sold at weaning. Only 11 percent of the farmers in the study sold some feeder pigs. The third step was to divide the remaining cost for each item by the number of pounds of live hogs produced, excluding the weight of any pigs sold at weaning. On the basis of these calculations, 100 lb. of hogs consisted of 91 lb. from slaughter hogs and 9 lb. from cull sows and gilts.

TABLE 11.—Costs of Producing 100 Lb. of Pork in West Central Ohio, 1962 and 1963.

	Low Cost Group 49 Records	High Cost Group 49 Records	Entire Study 148 Records
Labor	$ 1.20	$ 1.95	$ 1.55**
Tractor Power	.30	.40	.33*
Corn	6.35	7.55	6.91**
Oats	.18	.22	.23
Protein Supplement	2.70	3.35	3.01**
Pasture	.15	.14	.15
Feed Grinding Hired	.18	.20	.23
Veterinary and Medicine	.45	.60	.51**
Electricity and Heating Oil	.11	.19	.15**
Truck, Automobile, Telephone	.12	.25	.18**
Depreciation of Breeding Stock	.06	.10	.08**
Buildings and Equipment	1.00	1.95	1.40**
Taxes and Interest on Investment in Hogs	.40	.55	.45
Total	$13.20	$17.45	$15.18**
Number of Sows in Herd	56	51	53
Pigs Raised to Weaning per Litter	7.6	7.0	7.2*
Litters Farrowed per Sow per Year	1.7	1.6	1.7
Investment in Buildings and Equipment per Sow, Dollars	135	190	155**
Pork Produced by Cull Sows, Percent	7.2	11.1	8.6**

*Differences in related means significant at the .05 level.
**Differences in related means significant at the .01 level.

The average cost of producing 100 lb. of hogs for all farms in the study was $15.18. Feed accounted for about two-thirds of the total cost. Charges for the various items were as follows: feed, including hired grinding, $10.53 or 69 percent; tractor, building, and equipment charges, $1.73 or 12 percent, labor $1.55 or 10 percent; and miscellaneous, $1.37 or 9 percent.

Figures in Table 11 show that one-third of the farmers produced 100 lb. of live hogs at an average cost of only $13.20. In contrast to this situation, another third of the farmers had hog production costs averaging $17.45 per 100 lb. In other words, the low cost group of farmers produced 100 lb. of hogs for about three-fourths of the total cost incurred by the high cost group. This difference in costs amounted to $4.25 per 100 lb.

In hog production, the low cost group of farmers differed from the high cost group in the following ways: (1) they produced 100 lb. of hogs with 38 percent less labor and 17 percent less feed; (2) they lost fewer hogs by death; (3) they raised almost two more slaughter hogs or replacement gilts per sow in the herd; and (4) they had $55 less invested per sow in buildings and equipment.

Differences in costs of producing 100 lb. of hogs on the low and high cost groups of farms were: feed, including hired grinding, $1.90; tractor, building, and equipment charges, $1.05; labor, $.75; and miscellaneous, $.55.

The average amounts of labor, tractor power, and feed used to produce 100 lb. of hogs for the entire hog enterprise are shown in Table 12.

The amount of labor used to produce 100 lb. of hogs averaged .80 of an hour for the low cost group compared with 1.30 hours for the high cost group. These inputs include all labor used in raising and marketing hogs.

TABLE 12.—Labor, Tractor Power and Feed Used to Produce 100 Lb. of Pork in West Central Ohio, 1962 and 1963.

	Low Cost Group 49 Records	High Cost Group 49 Records	Entire Study 148 Records
Labor, Hours	.80	1.30	1.03
Tractor Power, Hours	.24	.32	.26
Corn, Lb.	323	384	352
Oats, Lb.	9	11	11
Protein Supplement, Lb.	42	56	49
Total Feed, Lb.	374	451	412

The amount of feed required to produce 100 lb. of hogs averaged 374 lb. for the low cost group of farmers compared with 451 lb. for the high cost group.

Costs for Different Size Herds

Figures in Table 13 show that the total cost of producing 100 lb. of hogs declined as more hogs were raised until size of breeding herd reached 34 sows. These reductions in costs were principally due to lowering the charges for labor, buildings, and equipment.

When size of herd averaged 24 sows, cost of labor was $1.91 per 100 lb. of hogs produced compared with $1.50 when size of herd was 34 sows.

Cost of buildings and equipment for each 100 lb. of hogs produced declined from $1.98 for a 24-sow herd to $1.29 when 34 sows were kept in the breeding herd.

Investment in buildings and equipment per sow averaged $240 for a 24-sow herd compared with $140 for a 34-sow herd.

TABLE 13.—How Size of Herd Affects Costs of Producing 100 Lb. of Pork, West Central Ohio, 1962 and 1963.

	Number of Sows in Herd			
	14-29 Sows Average 24	30-39 Sows Average 34	40-59 Sows Average 50	60-145 Sows Average 89
Labor	$ 1.91	$ 1.50	$ 1.49	$ 1.47*
Tractor Power	.28	.29	.36	.31
Feed	10.47	10.16	10.70	10.70
Veterinary and Medicine	.55	.43	.55	.45
Electricity and Heating Oil	.20	12	.19	.10*
Truck, Automobile, Telephone	.28	.18	.16	.12*
Depreciation of Breeding Stock	.13	.08	.06	.05
Buildings and Equipment	1.98	1.29	1.36	1.24**
Taxes and Interest on Investment in Hogs	.48	.40	.46	.42
Total	$16.28	$14.45	$15.33	$14 86**
Number of Records	25	37	41	45
Pigs Raised to Weaning per Litter	7.2	7.5	7.2	7.2
Litters Farrowed per Sow per Year	1 7	1 7	1 8	1 6**
Investment in Buildings and Equipment per Sow, Dollars	240	140	155	120**

*Differences in related means significant at the .05 level.
**Differences in related means significant at the 01 level.